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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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NORTH AMERICA INTELLECTUAL PROPERTY CORPORATION			GUPTA, PARUL H	
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MERRIFIELD, VA 22116			PAPER NUMBER	
			2627	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/604,507	Applicant(s) HSU ET AL.	
	Examiner Parul Gupta	Art Unit 2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 July 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 and 18-25 is/are rejected.
- 7) ☒ Claim(s) 15-17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-25 are pending for examination as interpreted by the examiner. No IDS was considered.

Drawings

2. Figures 1 and 3-7 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

3. The disclosure is objected to because of the following informalities: minor typographical errors such as the lack of spaces between certain words and the use of a bold "i" in the word "illustrates" in the first line of paragraph 0039 and the bold "a" in "and" in the first line of paragraph 0041. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 5-7, 9, 13-14, 18, 20, and 24-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ota et al., US Patent Publication 2003/0099174 in view of Koishi et al., US Patent 4,701,609.

Regarding claim 1, Ota et al. teaches in figure 12 a multi-pulse peak-hold device utilized to acquire an optical output power level of a laser diode in an optical recording apparatus, the optical recording apparatus having a photodiode (17) for generating a sensed power level signal according to the optical output of the laser diode, the multi-pulse peak-hold device comprising: a peak-hold circuit (5) comprising a first input for receiving the sensed power level signal and an output for a peak voltage signal; and a sample and hold circuit (65) comprising a first input for receiving the peak voltage signal, a second input for receiving a sample and hold signal (67), and an output for a held power level signal utilized by the optical recording apparatus to adjust the optical output power of the laser diode; wherein after a predetermined time period, the optical recording apparatus issues the sample and hold signal causing the sample and hold circuit to sample and hold the peak voltage signal. Ota et al. does not but Koishi et al. teaches a second input for receiving a reset signal and the optical recording apparatus issues the reset signal to reinitialize the peak-hold circuit (column 4, lines 58-66). Column 5, lines 23-28 also teach that the holding state of the peak-hold circuit is released, which is the same thing as resetting the peak-hold circuit. It would have been obvious to one of ordinary skill in the art at the time of the invention to include the concept of resetting the peak-hold circuit as taught by Koishi et al. into the system of

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Ota et al. The motivation would be to easily switch from the recording mode to the reproduction mode (column 4, lines 58-63 of Koishi et al.).

Regarding claim 5, Ota et al. teaches the multi-pulse peak-hold device in figure 12 of claim 1 wherein the peak-hold circuit (5) acquires and outputs a maximum peak voltage occurring in the sensed power level signal within the predetermined time period.

Regarding claim 6, Ota et al. teaches the multi-pulse peak-hold device in figure 12 of claim 1 wherein the peak-hold circuit (6) acquires and outputs a minimum-bottom voltage occurring in the sensed power level signal within the predetermined time period.

Regarding claim 7, Ota et al. teaches in figure 1 an optical recording apparatus having automatic power control for adjusting an optical output power level of a laser diode in the optical recording apparatus, the optical recording apparatus comprising: a control circuit (3); a photodiode comprising an output for outputting an optical power level signal (17); a peak-hold circuit comprising an output for outputting a peak voltage signal (5), a first input electrically connected to the output of the photodiode (through 18); a sample and hold circuit comprising an output (65), a first input electrically connected to the output of the peak-hold circuit, and a second input electrically connected to the control circuit for receiving a sample and hold signal (67); a reference power level setting unit comprising an output for outputting a reference power level signal (inputted to element 7 as explained in paragraph 0034); a feedback controller unit comprising an input and an output, the input of the feedback controller unit receiving a

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difference between the output of the sample and hold circuit and the reference power level signal (function performed by element 7); a laser diode driving unit (function performed by element 7) comprising an input electrically connected to the output of the feedback controller unit and an output electrically connected to the laser diode; and a laser diode (16) for radiating laser light onto an optical disc; wherein after a predetermined time period, the control circuit transmits the sample and hold signal causing the sample and hold circuit to sample and hold the peak signal. Ota et al. does not but Koishi et al. teaches a second input for receiving a reset signal and the control circuit then transmits the reset signal to reinitialize the peak-hold circuit (column 4, lines 58-66). Column 5, lines 23-28 also teach that the holding state of the peak-hold circuit is released, which is the same thing as resetting the peak-hold circuit. It would have been obvious to one of ordinary skill in the art at the time of the invention to include the concept of resetting the peak-hold circuit as taught by Koishi et al. into the system of Ota et al. The motivation would be to easily switch from the recording mode to the reproduction mode (column 4, lines 58-63 of Koishi et al.).

Regarding claim 9, Ota et al. teaches the optical recording apparatus in figure 1 of claim 7 further comprising a feed-forward path electrically connected between the reference power level setting unit and the feedback controller unit for speeding up transient response from read status to write status in an APC loop (accomplished via loop around element 18, 7, and 23).

Regarding claim 13, Ota et al. teaches the optical recording apparatus in figure 1 of claim 7 wherein the peak-hold circuit (5) acquires and outputs a maximum peak voltage occurring in the optical power level signal within the predetermined time period.

Regarding claim 14, Ota et al. teaches the optical recording apparatus in figure 1 of claim 7 wherein the peak-hold circuit (6) acquires and outputs a minimum bottom voltage occurring in the optical power level signal within the predetermined time period.

Regarding claim 18, Ota et al. teaches a method for measuring an optical output power level of a laser diode in an optical recording apparatus (given generally in paragraph 0006), the method comprising: utilizing a photodiode to generate a sensed power level signal according to the optical output of the laser diode (specifically mentioned in paragraph 0034, but also used in second embodiment as recited in paragraph 0050); utilizing a peak-hold circuit to acquire, and output a maximum voltage of the sensed power level signal (paragraph 0051); utilizing a sample and hold circuit to sample and hold the output of the peak-hold circuit after a predetermined time period according to a signal received by the sample and hold circuit from the optical recording apparatus (paragraph 0051). Ota et al. does not but Koishi et al. teaches a peak-hold circuit used to hold the maximum voltage (column 3, lines 62-66) and reinitializing the peak-hold circuit after the output of the peak-hold circuit has been sampled and held by the sample and hold circuit (column 4, lines 58-66). Column 5, lines 23-28 also teach that the holding state of the peak-hold circuit is released, which is the same thing as resetting the peak-hold circuit. It would have been obvious to one of ordinary skill in the

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art at the time of the invention to include the concept of resetting the peak-hold circuit as taught by Koishi et al. into the system of Ota et al. The motivation would be to easily switch from the recording mode to the reproduction mode (column 4, lines 58-63 of Koishi et al.).

Regarding claim 20, Ota et al. teaches the method of claim 18 further comprising speeding up the transient response from read status to write status in an APC loop by a feed-forward path from a reference power level setting unit to a feedback controller unit (accomplished via loop around element 18, 7, and 23 of figure 1 as explained in paragraph 0034, but also used in second embodiment as recited in paragraph 0050).

Regarding claim 24, Ota et al. teaches in paragraph 0051 the method of claim 18 wherein the peak-hold circuit acquires and outputs a maximum peak voltage occurring in the sensed power level signal within the predetermined time period.

Regarding claim 25, Ota et al. teaches in paragraph 0051 the method of claim 18 wherein the peak-hold circuit acquires and outputs a minimum bottom voltage occurring in the sensed power level signal within the predetermined time period.

5. Claims 2-4, 10-12, and 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ota et al. in view of Shiozaki et al., US Patent 6,990,050.

Ota et al. teaches the limitations of claims 1, 7 and 18 but fails to teach the further limitations of the given window signal of of claims 2, 10, and 21.

Regarding claim 2, Shiozaki et al. teaches the multi-pulse peak-hold device of claim 1 further comprising a switch (function performed by element 4 of figure 1) to control transmission of the sensed power level signal from the photodiode diode to the peak-hold circuit according to a window signal ("predetermined time interval" given in column 4, lines 57-58) issued by the optical recording apparatus.

Regarding claim 3, Shiozaki et al. teaches in figure 1 the multi-pulse peak-hold device of claim 2 wherein the window signal is issued by the optical recording apparatus to randomly select FPDO sequences from the FPDO pulses train. As the given device is only sampling in response to the given control signal and is not sampling continuously, the apparatus must be randomly selecting sequences from the given pulses train.

Regarding claim 4, Shiozaki et al. teaches in figure 1 the multi-pulse peak-hold device of claim 2 wherein the window signal is issued by the optical recording apparatus according to a predetermined FPDO sequence comprising fixed data patterns (purpose served by timing according to the EFM signal as given in column 5, lines 1-2).

Regarding claim 10, Shiozaki et al. teaches in figure 1 the optical recording apparatus of claim 7 further comprising a switch (function performed by element 4 of figure 1) electrically connected between the output of the photodiode (3) and the first input of the peak-hold circuit (elements 5 and 6) for controlling transmission of the optical power level signal from the photodiode to the peak-hold circuit according to a window signal ("predetermined time interval" given in column 4, lines 57-58) transmitted from the control circuit to the switch, wherein the optical power level signal is active to

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transmit from the photodiode to the peak-hold circuit within the window signal and is inactive outside the window signal.

Regarding claim 11, Shiozaki et al. teaches in figure 1 the optical recording apparatus of claim 10 wherein the window signal is transmitted to the switch only during a predetermined FPDO sequence comprising fixed recording data patterns (purpose served by timing according to the EFM signal as given in column 5, lines 1-2).

Regarding claim 12, Shiozaki et al. teaches in figure 1 the optical recording apparatus of claim 10 wherein the window signal is transmitted to the switch to select random FPDO sequences from the FPDO pulses train. As the given device is only sampling in response to the given control signal and is not sampling continuously, the apparatus must be randomly selecting sequences from the given pulses train.

Regarding claim 21, Shiozaki et al. teaches in column 4, line 47 - column 5, line 11 the method of claim 18 further comprising controlling transmission of the sensed power level signal from the photodiode diode to the peak-hold circuit with a switch according to a window signal ("predetermined time interval" given in column 4, lines 57-58) issued by the optical recording apparatus, wherein the sensed power level signal is active to transmit from the photodiode to the peak-hold circuit within the window signal and is inactive outside the window signal.

Regarding claim 22, Shiozaki et al. teaches in column 4, line 47 - column 5, line 11 the method of claim 21 further comprising transmitting the window signal from the optical recording apparatus to the switch to select a random FPDO sequence from a FPDO pulse train. As the given device is only sampling in response to the given control

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signal and is not sampling continuously, the apparatus must be randomly selecting sequences from the given pulses train.

Regarding claim 23, Shiozaki et al. teaches in column 4, line 47 - column 5, line 11 the method of claim 21 further comprising transmitting the window signal from the optical recording apparatus to the switch during a predetermined FPDO sequence comprising fixed recording data patterns (purpose served by timing according to the EFM signal as given in column 5, lines 1-2).

It would have been obvious to one of ordinary skill in the art at the time of the invention to include the concept of controlling the timing of holding the output of the photodiode as taught by Shiozaki et al. into the system of Ota et al. The motivation would be to have an apparatus capable of controlling the laser power to an optimal value, and enabling a stable recording/reproducing operation to be performed, even if offset occurs in a detected level (column 2, lines 58-63 of Shiozaki et al.).

6. Claims 8 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ota et al. in view of Eguchi et al., US Patent Publication 2002/0036961.

Ota et al. teaches the limitations of claims 7 and 18 but fails to teach the further limitations of claims 8 and 19.

Regarding claim 8, Eguchi et al. teaches in figure 1 the optical recording apparatus of claim 7 further comprising a low-pass filter (4) electrically connected between the output of the photodiode (2) and the first input of the peak-hold circuit

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(function performed by element 1) for alleviating noise effect on the output of the photodiode.

Regarding claim 19, Eguchi et al. teaches in paragraph 0044 and 0047 the method of claim 18 further comprising alleviating noise effects on the output of the photodiode utilizing a low-pass filter between the photodiode and the peak-hold circuit (function performed by sample-and-hold circuit of element 1).

It would have been obvious to one of ordinary skill in the art at the time of the invention to include the concept of a low-pass filter as taught by Eguchi et al. into the system of Ota et al. The motivation would be ensure the signal undergoes a smoothing process (paragraph 0047 of Eguchi et al.).

Allowable Subject Matter

7. Claims 15-17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claims 15-17 are allowed over the prior art because of the references cited in the record, considered in combination or alone, fail to suggest or fairly teach the given constant used to adjust the given values.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kwon et al., US Patent Publication 2004/0184378 has information on the further developments in the field. Ichikawa, US Patent Publication 2004/0136298 has a similar method and apparatus used for controlling the output of

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photodiodes. Chuang, US Patent 6,661,757 teaches a similar peak-hold circuit. Yonezawa et al., teaches a similar reset signal for the peak hold circuit.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Parul Gupta whose telephone number is 571-272-5260. The examiner can normally be reached on Monday through Thursday, from 8:30 AM to 7 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrea Wellington can be reached on 571-272-4483. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

PHG
8/16/06


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